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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/715,668	11/16/2000	Mohammed H. Nafie	TI-30627	7846

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EXAMINER	
ZHENG, EVA Y	

ART UNIT	PAPER NUMBER
2634	

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/715,668	NAFIE ET AL.	
	Examiner	Art Unit	
	Eva Yi Zheng	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 6 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 June 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *13-15 and 27* is/are allowed.

6)☒ Claim(s) *1-6,10-12,16-19 and 23-25* is/are rejected.

7)☒ Claim(s) *7-9,20-22,26* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Objection to Abstract has been withdrawn.

2. Objection to disclosure has been withdrawn due to amendment.

Response to Arguments

3. Applicant's arguments filed June 22, 2004 have been fully considered but they are not persuasive. The Examiner has thoroughly reviewed Applicant's arguments but firmly believes that the cited reference reasonably and properly meet the claimed limitation as rejected.

a) Applicant's argument – Regarding claims 1, 2, 3, 5, 6, 10, 11, 12, 16, 18, 19, 28 and 29 as rejected under 35 U.S.C. 102(e) as being anticipated by Hellmark (6,504,863), applicant argues that " the received digital quality is not combined with the received bit sequence".

Examiner's response – Hellmark discloses a receiver in a digital communication system receives a plurality of signals from a transmitter (as shown in Fig. 1A); the receiver obtains signal quality information (SNR) (660 in Fig.6A); and determines the desired bit bases on a combination of the received bit sequences and the quality information (as shown in Fig. 6A; also Col 7, L16-20). The desired bit is a combination of the received bit and the quality information since any SNR signals were determined from received signals. In other words, quality signals and desired signals cannot be separated from the received signals. Moreover, applicant is reminded that the Examiner

is entitled to give the broadest reasonable interpretation to the language of claims. Therefor, Hellmark did not fail to meet claim limitation.

a) Applicant's argument – Regarding claims 16 and 23-25 as rejected under 35 U.S.C. 102(e) as being anticipated by Madkour et al. (6,574,270), applicant argues that "the interfering signal component is an estimated and not a communication quality information".

Examiner's response – It is well-known that signal quality maybe the signal to noise ratio or the signal to interference ratio. Madkour et al. disclose recover desired signal information from an interfering signal estimate. The interfering signal is the quality of signal. Therefor, Madkour et al. did not fail to meet claim limitation. Applicant is reminded that the Examiner is entitled to give the broadest reasonable interpretation to the language of claims.

Claim Objections

4. Claims 7 and 20 are objected to because of the following informalities:

Regarding claims 7 and 20, line 15-16, the event of probabilities is not clear and multiplying the probabilities with what is not clear.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claim 1,2,3,5,6,10,11,12,16,18,19,28,and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by Hellmark. (6,504,863)

A. Regarding claim 1,Hellmark discloses a method of communicating a desired bit sequence over a wireless communication link, comprising:

Including the desired bit sequence in each of a plurality of transmissions over the wireless communication link (Fig. 1A; Col 1, L31-34);

producing in response to each of the plurality of transmissions a received bit sequence corresponding to the desired bit sequence (block 640 in Fig. 6A);

obtaining information indicative of communication quality associated with each of the plurality of transmissions (block 660 in Fig. 6A); and

making a determination of the desired bit sequence based on the received bit sequences and the communication quality information (block 680 in Fig. 6A).

B. Regarding claim 2, Hellmark discloses obtaining step includes estimating signal-to-noise ratios respectively associated with the plurality of transmissions. (Col 8, L9-13)

C. Regarding claim 3, Hellmark discloses transmitting the plurality of transmissions on respectively different transmission frequencies. (Col 1, L17-18)

D. Regarding claim 5, Hellmark discloses producing step includes decoding each of a plurality of packets which are respectively included in the plurality of transmissions and in each of which is included the desired bit sequence. (Col 7, L6-21)

E. Regarding claim 6, Hellmark discloses making step includes providing in response to the received bit sequences and the communication quality information a plurality of predetermined probabilities that the respective received bit sequences correspond to a predetermined bit sequence that could possibly be the desired bit sequence. (Col 8, L41-53)

F. Regarding claim 10, Hellmark discloses obtaining step includes obtaining a plurality of correlation values respectively associated with the plurality of transmissions. (Col 8, L9-19)

G. Regarding claim 11, Hellmark discloses making step includes making a determination that the received bit sequence corresponding to the largest of the correlation values is the desired bit sequence. (Col 7, L39-40; Col 8, L9-19)

H. Regarding claim 12, Hellmark discloses making step includes combining the received bit sequences with the corresponding correlation values. (Table 3; Col 8, L41-53)

I. Regarding claim 16, as shown in Fig. 6A,Hellmark discloses a wireless communication apparatus, comprising:

a first input (630) for receiving a plurality of received bit sequences respectively produced in response to a plurality of transmissions received via a wireless communication link, each of said received bit sequences corresponding to a desired bit sequence included in each of said plurality of transmissions;

a second input (660) for receiving information indicative of communication quality associated with each of the plurality of transmissions; and

a determiner (680) coupled to said inputs for making a determination of the desired bit sequence based on the received bit sequences and the communication quality information.

J. Regarding claim18, Hellmark discloses each of said plurality of transmissions includes a packet having therein the desired bit sequence (Col 6, L60-61), and including a decoder (block 630 in Fig. 6A) coupled to said first input for receiving said packets via the wireless communication link and for decoding said packets to produce the respective bit sequences. (Col 7, L11-15)

K. Regarding claim19, Hellmark discloses determiner (block 680 in Fig. 6A) is operable for providing in response to the received bit sequences and the communication quality information a plurality of predetermined probabilities that the respective bit sequences correspond to a predetermined bit sequence that could possibly be the desired bit sequence. (Col 8, L41-53)

L. Regarding claim 28, Hellmark discloses a method of communicating a desired bit sequence over a wireless communication link, comprising:

including the desired bit sequence in each of a plurality of transmissions over the wireless communication link (Fig. 1A; Col 1, L31-34);

producing in response to each of the plurality of transmissions a received bit sequence corresponding to the desired bit sequence (630 and 640 in Fig. 6A);

applying a majority logic operation to the received bit sequences (660 in Fig. 6A); and

making a determination that a result of the majority logic operation is the desired bit sequence. (680 in Fig. 6A)

M. Regarding claim 29, as shown in Fig. 6A, Hellmark discloses a wireless communication apparatus, comprising:

an input (630) for receiving a plurality of received bit sequences respectively produced in response to a plurality of transmissions received via a wireless communication link, each of said received bit sequences corresponding to a desired bit sequence included in each of said plurality of transmissions (Col 7, L6-21); and

a determiner (680) coupled to said input for applying a majority logic operation (660) to the received bit sequences and making a determination that a result of the majority logic operation is the desired bit sequence. (Col 8, L41-53)

7. Claim 16, 23, 24, and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Madkour et al. (6.574,270)

A. Regarding claim 16, as shown in Fig. 4,Madkour et al. disclose a wireless communication apparatus, comprising:

a first input (415) for receiving a plurality of received bit sequences respectively produced in response to a plurality of transmissions received via a wireless communication link, each of said received bit sequences corresponding to a desired bit sequence included in each of said plurality of transmissions;(Col 9, L 1-4)

a second input (425) for receiving information indicative of communication quality associated with each of the plurality of transmissions; and

a determiner (445) coupled to said inputs for making a determination of the desired bit sequence based on the received bit sequences and the communication quality information.

B. Regarding claim 23, Madkour et al. disclose a correlator (425) coupled to said second input for producing a plurality of correlation values respectively associated with said plurality of transmissions and providing the correlation values to said second input. (Col 9, L11-14)

C. Regarding claim 24, Madkour et al. disclose the determiner is operable for making a determination that the received bit sequence corresponding to the largest of the correlation values is the desired bit sequence. (Col 9, L22-33)

D. Regarding claim 25, Madkour et al. disclose the determiner includes a combiner (455) coupled to said first and second inputs for combining the received bit sequences with the corresponding correlation values. (Col 9, L46-48)

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 4 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hellmark in view of applicant admitted prior art (AAPA).

Regarding claim 4 and 17, Hellmark discloses a transceiver for cellular mobile radio telephone system and all the subject matter as described above except for the specific teaching of a bluetooth link.

AAPA discloses typical bluetooth devices include cordless phone station, and LAN access point, etc. Bluetooth is essentially used for voice communications. (background, Page 3-4)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the bluetooth link as the communication link in the Hellmark's system to improve the communication quality and providing more gain in channel fading for plurality of transmissions.

Allowable Subject Matter

10. Claim 26 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. Claims 13-15 and 27 are allowed.

12. The following is an examiner's statement of reasons for allowance:

None of the prior art teaches or suggests a wireless communications system over fading channels has a first input for receiving from transmission a plurality of received bit sequences corresponding to a desired bit sequence in each of plurality of transmissions; a second input for receiving quality information associated with each of the plurality of transmission; a determiner coupled to the first and second input for determining the desired bit sequence based on the received bit sequences and the quality information, wherein the desired bit sequence and the received bit sequence each include only a signal bit; the determiner includes a combiner for combining the received bit sequences with the corresponding correlation values; the combiner is operable for multiplying each of the received bit sequences by one of the corresponding correlation value and the square of the corresponding correlation value to produce a plurality of multiplication results; the combiner is also operable for summing the multiplication results together; wherein the determiner also including a decoder coupled to the combiner for decoding the summation result; and a correlator coupled to the second input for producing a plurality of correlation values respectively associated with the plurality of sequences and correlation values to the second input.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eva Yi Zheng whose telephone number is (571) 272-3049. The examiner can normally be reached on 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571) 272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-879-9306.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Eva Yi Zheng
Examiner
Art Unit 2634

January 28, 2005

SHUWANG LIU
PRIMARY EXAMINER